

1. (Amended) A navigation information system for providing information to a mobile user dependent on the location of the mobile user, the system comprising:

a mobile communications system having a fixed part and one or more mobile units for communicating with the fixed part,

each mobile unit including means for transmitting to the fixed part a request for guidance information relating to a destination specified by the user of the mobile unit, and for receiving such guidance information from the fixed part, and

the fixed part including:

means for determining the location of a mobile unit requesting guidance information,

means for generating guidance information according to the present location and specified destination of the mobile unit, and

means for transmitting the guidance information so generated to the mobile unit,

whereby information dependent on the location and specified destination of the mobile unit can be transmitted to the mobile unit,

means for determining the location of the mobile part in relation to a geographical overlay comprising a plurality of overlay areas, and

means for transmitting information associated with an overlay area which includes the location of the mobile part,

whereby a mobile part within that overlay area receives information associated with that overlay area.

23. (Amended) A system as [claimed] in Claim [2,] 1 including:

means for storing a digital representation of the geographical overlay, and

means for modifying the stored representation such that the configurations of the overlay areas may be selected to meet changing requirements.

3 4. (Twice Amended) A system [according to] as in Claim [2,] 1 including:

means for determining when a mobile part enters a predetermined overlay area, and

means for transmitting a message to the mobile part in response to the mobile part entering the predetermined overlay area.

5. (Twice Amended) A system [according to] as in Claim [2,] 1 including:

means for determining when a mobile part enters a predetermined overlay area, and

means for transmitting a message, to a user other than the said mobile part, in response to the said mobile part entering the predetermined overlay area.

4 ~~6~~. (Twice Amended) A system [according to] as in claim <sup>3</sup>~~4~~, including:

means to store a value associated with the mobile part, and

means arranged to modify the stored value in response to the message.

~~6~~ 7. (Twice Amended) A system as [claimed] in Claim 1 having means for locating the position of the mobile part by radio location.

8. (Amended) A system as [claimed] in Claim 7, wherein the means for locating position comprises:

a satellite navigation system receiver, [and/or] and  
means for identifying the location of the mobile part in relation to elements  
of the fixed part of the communications system.

9. (Twice Amended) A system as [claimed] in Claim 1, wherein:

the means for determining the location of the mobile part comprises means  
to interrogate a location-identifying means forming part of the mobile part.

10. (Amended) A system as [claimed] in claim 9, wherein:

the fixed part has means to determine the approximate location of the  
mobile part, and [wherein]

the location identifying means of the mobile part is arranged to respond to a  
location request from the interrogation means with a non-unique location signal  
which, in combination with the approximate location determined by the fixed part,  
determines a unique location.

11. (Twice Amended) A system as claimed in Claim 1 wherein the mobile  
part has means for location its position by dead reckoning.

12. (Twice-Amended) A system as [claimed] in Claim 1 wherein:

the fixed part [including] includes means for generating and maintaining guidance data based on vehicle movement data derived from time information and position measurements of a plurality of the mobile parts [and/or] and estimations of future locations of the mobile parts based on the guidance information previously transmitted to the mobile parts.

13. (Twice Amended) A system [according to] as in Claim 1 wherein:

the fixed part comprises means for transmitting to the mobile part an expected range of movement information and for receiving from the mobile part movement measurements outside the expected range, and

the mobile part comprises:

means for measuring location and time to derive movement information,

means to compare the movement information with the expected range received from a fixed part of the system, and

means to automatically report to the fixed system movement  
measurements outside the expected range.

14. (Twice Amended) A system [according to] as in Claim 1, wherein the  
fixed part [including] includes:

means for storing guidance data,

means for updating the stored guidance data,

means for identifying mobile parts to which the updated data are applicable,

and

means for transmitting such data over the communications system to the  
mobile parts to identified.

15. (Twice Amended) A system [according to] as in Claim 1, wherein:

the mobile part includes guidance instruction means controllable by  
instructions contained in the guidance information transmitted from the fixed part  
over the communications link, whereby guidance instructions can be  
communicated to the user by means of the guidance instruction means.

16. (Twice Amended) A system [according to] as in Claim 1, wherein:

the fixed part has input means operable by a human operator to input guidance instruction requests to the fixed part.

17. (Amended) A navigation information system for providing information to one or more mobile users dependent on their locations, the system comprising:

means for determining the location of a mobile unit requesting guidance information relating to a specified destination,

means for generating information for guidance of the user of the mobile unit according to the present location and specified destination of the mobile unit, and

a communications system for transmitting the guidance information so generated to the mobile unit,

whereby guidance information dependent on the present location and specified destination of the mobile unit can be transmitted to the mobile unit,

means for determining the location of a mobile unit in relation to a geographical overlay comprising a plurality of overlay areas, and

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means for transmitting information associated with an overlay area which includes the location of the mobile unit,  
whereby a mobile part within that overlay area receives information associated with that overlay area.

1019. (Amended) A system as [claimed] in Claim [18,] <sup>19</sup>~~17~~ including:

means for storing a digital representation of the geographical overlay, and  
means for modifying the stored representation such that the configurations of the overlay areas may be selected to meet changing requirements.

2120. (Twice Amended) A system [according to] as in Claim [18,] <sup>19</sup>~~17~~  
including:

means for determining when a mobile unit enters a predetermined overlay area, and

means for transmitting a message to the mobile unit in response to the mobile unit entering the predetermined overlay area.

2321. (Twice Amended) A system [according to] as in Claim [18,] <sup>19</sup>~~17~~  
including:



means for determining when a mobile unit enters a predetermined overlay area, and

means for transmitting a message, to a user other than the said mobile unit, in response to the said mobile unit entering the predetermined overlay area.

22. (Twice Amended) A system [according to] as in claim 20, including:

means to store a value associated with the mobile unit, and

means arranged to modify the stored value in response to the message.

<sup>19</sup>  
23. (Twice Amended) A system as [claimed] in claim ~~17~~, wherein the means for determining the location of a mobile unit [comprising] includes means to interrogate a location-identifying means of a co-operating mobile unit to determine its position[.].

<sup>25</sup>  
24. (Twice Amended) A system as [claimed] in claim ~~17~~, <sup>19</sup>wherein:

the means for locating position comprises means for identifying the location of the mobile unit in relation to elements of the fixed part of the communications system.

<sup>26</sup>  
25. (Amended) A system as [claimed] in claim <sup>25</sup>~~24~~, wherein the means for locating position comprises:

means to determine the approximate location of the mobile unit,

means to receive a non-unique location signal from the mobile unit, and

means to combine the approximate location information with the non-unique location information to determine a unique location.

<sup>27</sup>  
26. (Twice Amended) A system as [claimed] in claim <sup>19</sup>~~17~~, including:

means for generating and maintaining guidance data based on vehicle movement data derived from time information and position measurements of a plurality of the mobile parts.

<sup>28</sup>  
27. (Twice Amended) A system [according to] as in claim <sup>19</sup>~~17~~[,] having means for transmitting to the mobile part an expected range of movement information, and for receiving from the mobile part movement measurements outside the expected range.

<sup>29</sup>  
28. (Twice Amended) A system [according to] as in claim <sup>19</sup>17[,] including:

means for storing guidance data,

means for updating the stored guidance data,

means for identifying mobile units to which the updated data are applicable,

and

means for transmitting such data over the communications system to the mobile units so identified.

<sup>30</sup>  
29. (Twice Amended) A system as [claimed] in Claim <sup>19</sup>17[,] having input means operable by a human operator to input guidance instruction requests.

<sup>30</sup>  
30. (Amended) A mobile unit for a navigation information system, said mobile unit comprising:

means for identifying the present position of the mobile unit,

means for transmitting, over a communications link, a request for guidance to a specified destination, and

guidance instruction means controllable by guidance instruction information received over the communications link,

whereby guidance instructions between the present location and the specified location can be communicated to a user by means of the guidance instruction means.

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<sup>33</sup>  
31. (Amended) A mobile unit [according to] as in claim <sup>32</sup>~~30~~, further comprising:

means for measuring the location of the mobile unit, and time, to derive movement information,

means to compare the movement information with an expected range received from a fixed part of the system, and

means to automatically report to the fixed system movement measurements outside the expected range.

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32. (Amended) A method of providing navigation guidance information to mobile units of a mobile radio system, the information being dependent on the locations of the mobile units, the method comprising the steps of:

[-] transmitting, from a mobile unit to the fixed part, a request for navigation guidance to a specified destination;

[-] determining the location of the mobile unit;

[-] generating guidance information on the basis of the location information, the requested destination, and navigation data stored in the fixed part; and

[-] transmitting the guidance information from the fixed part to the mobile unit;

whereby guidance information relevant to the present location and specified destination of the mobile unit is transmitted to the mobile unit;

determining the location of the mobile unit in relation to a geographical overlay comprising a plurality of overlay areas,

generating information associated with an overlay area which includes the location of the mobile part, and

transmitting the information associated with the relevant overlay area to the mobile part,

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whereby a mobile part within that overlay area receives information  
associated with that overlay area.

36 34. (Amended) A method as [claimed] in claim [33,] <sup>35</sup>32 including the steps  
of:

storing a digital representation of the geographical overlay, and

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modifying the stored representation such that the configurations of the  
overlay areas may be selected to meet changing requirements.

37 35. (Twice Amended) A method [according to] <sup>35</sup>as in Claim [33,] <sup>35</sup>32  
comprising the further steps of:

determining when a mobile unit enters a predetermined overlay area, and

transmitting a message to the mobile unit in response to the mobile unit  
entering the predetermined overlay area.

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36. (Twice Amended) A method [according to] <sup>35</sup>as in Claim [33,] <sup>35</sup>32

— including the further steps of:

determining when a mobile unit enters a predetermined overlay area,  
and

transmitting a message to a user other than the said mobile unit in  
response to the mobile unit entering the predetermined overlay area.

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37. (Twice Amended) A method [according to] as in claim 37

including the further step of modifying a stored value associated with the  
mobile unit in response to the message.

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38. (Twice Amended) A method as [claimed] in Claim 37, wherein

the position of the mobile unit is identified by a radio location method.

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39. (Amended) A method as [claimed] in Claim 38, wherein the  
position of the mobile unit is determined by means of a satellite navigation  
system [and/or] and by identifying the location of the mobile part in relation  
to elements of the fixed part of the communications system.

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40. (Twice Amended) A method [according to] as in Claim 37,

wherein the fixed unit interrogates the mobile unit to identify its location.

<sup>44</sup>  
41. (Amended) A method as [claimed] in claim <sup>4 3</sup>40 wherein:

the fixed part determines the approximate location of the mobile part,  
and [wherein]

the mobile part responds to a location request from the interrogation  
means with a non-unique location signal which, in combination with the  
approximate location determined by the fixed part, determines a unique  
location.

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42. (Twice Amended) A method as [claimed] in Claim 32, wherein  
the mobile unit identifies its position by dead reckoning.

43. (Twice Amended) A method [according to] as in Claim 32,  
including the steps of:

generating and maintaining data based on vehicle movement data  
derived from time information and position measurements of a plurality of  
the mobile parts [and/or] and estimations of future locations of the mobile



parts based on the guidance information previously transmitted to the mobile parts.

<sup>42</sup>  
44. (Twice Amended) A method [according to] as in Claim <sup>35</sup>32

wherein:

the fixed part transmits to the mobile part an expected range of movement information, and

the mobile part measures location and time to derive movement information, compares the movement information with the expected range received from the fixed part of the system, and reports to the fixed system movement measurements outside the expected range.

<sup>48</sup>  
45. (Twice Amended) A method as [claimed] in Claim <sup>35</sup>32 including the further steps of: [the]

updating the stored data,

identifying the mobile units to which the updated data are applicable,

and

transmitting such data over the communications system to said  
applicable mobile parts.

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<sup>49</sup>  
46. (Twice Amended) A method as [claimed] in Claim <sup>35</sup>~~32~~, wherein

the guidance information transmitted to the mobile unit controls guidance  
instruction means forming part of the mobile unit, whereby guidance  
instructions can be communicated to the user of the mobile unit.

Please add new claims 49-52:

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--49. A system as in Claim 7, wherein the means for locating position  
comprises at least one of:

- (a) a satellite navigation system receiver, and
- (b) means for identifying the location of the mobile part in relation to  
elements of the fixed part of the communications system.

<sup>49</sup>  
50. A system as in claim 1 wherein:

the fixed part includes means for generating and maintaining guidance  
data based on at least one of:

(a) vehicle movement data derived from time information and position measurements of a plurality of the mobile parts and

(b) estimations of future locations of the mobile parts based on the guidance information previously transmitted to the mobile parts.

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51. A method as in Claim *40* 38, wherein the position of the mobile unit is

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determined by at least one of:

(a) use of a satellite navigation system and

(b) by identifying the location of the mobile part in relation to elements of the fixed part of the communications system.

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52. A method as in Claim 32 including the steps of at least one of:

(a) generating and maintaining data based on vehicle movement data derived from time information and position measurements of a plurality of the mobile parts and

(b) estimations of future locations of the mobile parts based on the guidance information previously transmitted to the mobile parts.--